

Message from Versiti President and CEO Chris Miskel

As I look back on 2024, I am inspired by Versiti Blood Research Institute's achievements. We welcomed two new investigators, Phillip Doerfler, PhD, and Joshua Muia, PhD, whose expertise in sickle cell disease and bleeding disorders, respectively, will increase our collective knowledge and pave the way for new treatments for patients.

We also expanded our research into artificial intelligence (AI) and how it can be used to identify biomarkers for cancer, providing the insights necessary to one day finding a cure.

In September, we broke ground on the VBRI building expansion, ushering in a new era of innovation. This expansion will not only grow our physical footprint but provide the resources necessary to attract top scientific talent, build upon our expertise, and improve outcomes for patients locally and around the world.

As we enter 2025, I am excited to see where we go next and how we continue to be leaders in blood health innovation.



Chris Miskel
Versiti President and CEO

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Versiti Blood Research Institute investigators recognized on Stanford University list of top-cited scientists

Brian Curtis, PhD, D(ABMLI), MT(ASCP), SBB: 2023 and career-long publications

Michael Deininger, MD, PhD: 2023 and career-long publications

Bonnie Dittel, PhD: career-long publications

Subramaniam Malarkannan, PhD: 2023 publications

Alan Mast, MD, PhD: 2023 and career-long publications

Peter Newman, PhD: 2023 and career-long publications

Roy Silverstein, MD: 2023 and career-long publications

Creating the blood products of the future

Platelets play a key role in hemostasis, the body's natural process of stopping bleeding. In addition to their Band-Aid capabilities, platelets also play a crucial role in various physiological processes, including inflammation, cancer development and sepsis.

Versiti Blood Research Institute (VBRI) Senior Investigator Christian Kastrup, PhD, was recently featured on the cover of the scientific journal *Blood* for his lab's discovery of a novel method for enhancing platelet therapies, which potentially broadens their application beyond traditional uses.

Dr. Kastrup's lab set out to understand how platelets might be enhanced to control their function, maintain their stability and extend their shelf life. They successfully demonstrated the feasibility of introducing platelets to lipid nanoparticles that contain mRNA, a molecule that carries instructions for how a cell should behave. "We showed that platelets were still functional with this mRNA treatment and that they didn't lose any functions—but that they gained functions," he said. "This marks a significant milestone in platelet research."

Dr. Kastrup's team is also exploring other uses for platelets modified with mRNA, including using platelets to alleviate inflammation that occurs in pulmonary embolism or deep vein thrombosis. Another key avenue of research is using platelets to treat patients with cancer.

"Platelets accumulate in tumors, but they don't directly fight the tumors," he said. "There is an unexplored opportunity to use platelets to deliver anti-cancer proteins and anti-tumor proteins so that platelets can normalize platelet counts and slow down or eliminate the spread of cancer."

Though this research is in its infancy, VBRI is well positioned to propel this work. "Versiti is the only place where this technology breakthrough is happening," Dr. Kastrup said. "We're creating the blood products of the future."



| Christian Kastrup, PhD

Community Beacon of Hope: Versiti Blood Research Institute Foundation Board Members

This year, three members of the VBRI Foundation board close out their terms. Together, Tom Hauske, Rob Manegold and Peter Ziegler count more than 75 years of service to VBRI, acting as good stewards for our research and helping to propel lifesaving discoveries. We are grateful to them for their service—thank you for all you do to further our lifesaving mission!

Celebrating Senior Investigator Robert Montgomery, MD

Senior Investigator Robert Montgomery, MD, has been a driving force behind blood disease research for decades. His work has made a significant impact in the field of blood health, from studying HIV/AIDS in patients who received blood transfusions to treat hemophilia, to exploring von Willebrand disease and improving treatments for patients. He has made an invaluable mark on the field, and though we will miss his insight, we wish him all the best in his retirement. Congratulations, Dr. Montgomery!



Addressing a major cause of vision loss globally

Approximately 38.4 million people in the U.S.—11.6% of the total population—has diabetes which, if left untreated, can cause damage to the cardiovascular and nervous systems. About 80% of people with diabetes develop diabetic retinopathy (DR), the leading cause of blindness in adults. DR occurs when blood vessels in the retina weaken and start to bulge, forming tiny pouches. Over time, these pouches leak, causing swelling and vision distortion. As DR progresses, the retina begins to grow new blood vessels that are prone to bleeding and can cause complete vision loss.

Versiti Blood Research Institute (VBRI) Senior Investigator Magdalena Chrzanowska, PhD, is an expert in vascular biology and studies DR with a goal of developing targeted treatments. Her research focuses on RAP1B, a signaling molecule in endothelial cells, the cells that line blood vessels. RAP1B moderates cell interactions and is crucial in balancing inflammation in the retina and modulating endothelial cell responses to vascular endothelial growth factor (VEGF), the protein that stimulates the growth of blood vessels.

Through her research, Dr. Chrzanowska aims to understand the roles and functions of RAP1B in the regulation of signaling by VEGF, and inflammatory factors and their impact on the vasculature of the retina, which will provide insights essential for developing improved treatments for retinal vascular diseases.

"Overall, this study not only advances our understanding of diabetic retinopathy, but also highlights the importance of molecular research in developing personalized and precise medical treatments," she said. "Early insights into endothelial cell changes could inform preventive measures in vascular health, helping to thwart disease progression from the outset ... offering patients more effective and tailored therapeutic options, while enhancing their overall prognosis and quality of life."



| Magdalena Chrzanowska, PhD

Inspiring future leaders in blood science: VBRI teams up with Girl Scouts

We're not just investing in lifesaving research—we're also investing in the next generation of scientific minds. Last fall, Girl Scouts Troop 1148, led by Versiti EVP and Chief Marketing Officer Gretchen Jameson, EdD, donned their lab coats and stepped into the world of cutting-edge research.

Led by Investigator Sid Rao, MD, PhD, these 6th grade Girl Scouts experienced hands-on science, collecting their own cells and observing the magic of DNA precipitation. Moments like these—where curiosity and discovery meet—inspire young leaders to imagine themselves in science careers, including in life-changing fields like blood health research.

This collaboration highlights the power of partnership: two powerhouse missions, Versiti and Girl Scouts of Wisconsin Southeast, working together to ignite possibilities for the future. Girl Scouts CEO Ana Simpson joined the event, encouraging the girls to embrace scouting and the limitless opportunities it offers.



"Experiences like this spark curiosity and inspire imaginations—and the world will be better for it," Jameson said.

With pizza, scientists and a glimpse into how research saves lives, this unique program represents what philanthropy makes possible: advancing cures while inspiring tomorrow's leaders. Thank you for your continued support of the Versiti Blood Research Institute Foundation. Together, we're creating breakthroughs—today and for generations to come.